

**ALAN S. CROSS, M. D.**

**CURRICULUM VITAE**

Professor of Medicine  
Division of Infectious Diseases  
Department of Medicine  
and  
Director, Infectious Diseases  
University of Maryland Cancer Center  
22 South Greene Street  
Baltimore, Maryland 21201

Date of Birth:	July 26, 1944
Place of Birth:	Passaic, New Jersey
Citizenship:	U.S.A.
SS#:	049-34-7432

**EDUCATION**

1966	B.A., magna cum laude Harvard College
1970	M.D. University of Pennsylvania, School of Medicine

**Internship (Medical)**

1970 - 1971	Presbyterian - St. Luke's Hospital Chicago, Illinois
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**Residency**

1971 - 1972	Presbyterian - St. Luke's Hospital Chicago, Illinois
1972 - 1973	Harvard Medical School - Boston City Hospital Boston, Massachusetts

**Subspecialty Fellowship Training  
(Infectious Diseases)**

1973 - 1974

Strong Memorial Hospital  
University of Rochester School of Medicine  
Rochester, New York

**CERTIFICATION**

June 1973 - Diplomate, American Board of Internal Medicine

October 1976 - Diplomate in Infectious Diseases of the American Board of Internal Medicine

**LICENSURE**

September 1996 Maryland #D20709

September 1971 Illinois #036-44748

June 1973 New York #116528

**MAJOR RESEARCH INTERESTS** Infections in the immunocompromised host; vaccine development; role of endotoxin and cytokines in inflammation

**MILITARY SERVICE**

Colonel (Retired), Medical Corps  
Department of Bacterial Diseases  
Division of Communicable Disease and Immunology  
Walter Reed Army Institute of Research  
Washington, D.C. 203070-5100

"A" designator, June 27, 1990

Legion of Merit, 1994

Meritorious Service Medal, 1989

E. Karl Bastress Award for Excellence in Leveraging the Army Research and Development Program 1991

Retired from Military Service: August 1, 1994

**FACULTY POSITIONS**

1971 - 1972 Teaching Assistant, Rush Medical College  
Chief: Theodore B. Schwartz, M.D.

**FACULTY POSITIONS CONT:**

1972 - 1973	Teaching Fellow in Medicine, Harvard Medical School Chief: Franklin Epstein, M.D., (present address: Beth Israel Hospital, Boston, Massachusetts)
1973 - 1974	Infectious Disease Fellowship - Instructor in Medicine, University of Rochester School of Medicine Chief: R. Gordon Douglas, M.D. (present address: Merck, Sharp & Dohme, Rahway, New Jersey)
1974 - 1975	Infectious Disease Research Fellowship Department of Bacterial Disease Walter Reed Army Institute of Research Chief: Malcolm Artenstein, M.D. (Deceased)
1974 - 1994	Staff, Walter Reed Army Medical Center Washington, D.C.
1975 - 1994	Attending Staff, Department of Medicine and Infectious Disease Service, Walter Reed Army Medical Center, Washington, D.C.
1977 - 1981	Assistant Professor of Medicine, Uniformed Services University of the Health Sciences, Bethesda, Maryland
1982 - 1988	Associate Professor of Medicine, Uniformed Services University of the Health Sciences, Bethesda, Maryland
1988 - 1994	Professor of Medicine, Uniformed Services University of the Health Sciences, Bethesda, Maryland
1994 -	Professor of Medicine, University of Maryland School of Medicine
1996-	Affiliate Professor, University of Maryland at Baltimore School of Pharmacy

**MAJOR ACADEMIC TASKS - (Walter Reed Army Medical Center)**

- 1974 - 1984      Hospital Epidemiologist  
Walter Reed Army Medical Center  
Washington, D.C.
- 1974 - 1994      Medical Research Officer  
Department of Bacterial Diseases  
Walter Reed Army Institute of Research  
Washington, D.C.
- 1988 - 1990      Assistant Chief, Department of Bacterial Diseases  
Walter Reed Army Institute of Research  
Washington, D.C.
- 1990 - 1994      Chief, Department of Bacterial Diseases  
Walter Reed Army Institute of Research  
Washington, D.C.

**MAJOR ACADEMIC TASKS - (UMAB)**

- 1994 -            Director, Program in Infectious Diseases  
University of Maryland Cancer Center
- 1994 -            Medical Director, UMCC Microbiology and Virology Laboratory

**PROFESSIONAL MEMBERSHIP**

American Association for the Advancement of Science  
American Society for Microbiology  
American Federation for Clinical Research  
Infectious Disease Society of America, Fellow 1984  
International Endotoxin Society  
International Cytokine Society  
Immunocompromised Host Society  
American Association of Immunologists

### **EDITORIAL TASKS**

1980 - 1994	Editorial Review Board, WRAIR
1985 - 1989	Editorial Board, <u>Journal of Nosocomial Infection</u>
1987 -	Reviewer, Canadian Cystic Fibrosis Foundation

### **MAJOR CONSULTANT AND MEMBERSHIP ACTIVITIES**

#### **National:**

1983 -	Consultant, Veterans Administration Merit Review Board for Infectious Diseases
1984 - 1987	Advisory Committee, Food and Drug Administration Anti-Infective Drugs Committee
1983 - 1988	Consultant, CDC, Guidelines for Nosocomial Infections
June - 1992	Member, NIH Special Review Committee for RFA AI-92-02
Dec. - 1991	Member, HA-1A Ad Hoc Data Review Committee, FDA
1990 - 1995	Executive Committee, VA Cooperative Study 316. Efficacy of passive immunization in the prevention of infections due to Klebsiella species and Pseudomonas aeruginosa
Apr. 1995	NIH Site Visit, General Clinic Research Center, Bowman-Gray School of Medicine
Apr. 1995	Ad Hoc Review Committee, NIH, Bacteriology & Mycology-1 Study Section
Dec. 1995	Ad Hoc Review Committee, NIH, Bacteriology & Mycology-1 Study Section
Aug. 1996	Ad Hoc Review Committee, NIH, Bacteriology & Mycology-1 Study Section

#### **CAMPUS ACTIVITIES - (Walter Reed Army Medical Center)**

1974 - 1984	Infection Control Committee
1974 - 1978	Ad Hoc Committee on Antibiotic Usage
1978 - 1985	Ad Hoc Study Group on Bacterial Diseases
1986 - 1988	GS-14 Peer Review Committee
1986 - 1994	Scientific Review Committee
1989 - 1994	Chairman, Gram-negative Bacterial Products Advisory Committee
1989 - 1994	Member, Neisserial Vaccine Products Steering Committee
1990 - 1994	Member, Scientific Steering Committee for Immunomodulators
1990 - 1994	GS-12/13 Peer Review Committee

**CAMPUS ACTIVITIES - (UMCC)**

- 1994 - AML Clinical Utilization Committee
- 1994 - Chairman, Infection Control Committee
- 1994 - 1995 Search Committee, Bone Marrow Transplant Director
- 1994 - Search Committee, Faculty Candidate UMCC/Dept. Microbiology and Immunology
- 1994 - Executive Committee, UMMS Infection Control Committee
- 1994 - Antimicrobial Subcommittee of UMMS Therapeutics Committee
- 1994 - Clinical Laboratories Division Heads/Quality Assurance Committee
- 1994 - Fellowship Search Committee, Division of Infectious Diseases
- 1996- Interviewer, Admissions Committee, School of Medicine

**RESEARCH DIRECTION:**

1. Dr. Matthias Trautmann, Deutsche Forschungsgemeinschaft Visiting Scholar, October 1986 - October 1987.
2. Dr. Carl Vermeulen, Department of Biology, College of William and Mary. Battelle Fellow, Summers 1985 - 1987.
3. Dr. Niamh Kelly, National Research Council Fellow, July 1988 - July 1990.
4. Dr. Yuan Liang, National Research Council Fellow, May 1991 - April, 1995
5. Dr. Steven Opal, Fellow, Infectious Diseases Service, Walter Reed Army Medical Center, 1980 - 1982.
6. Dr. Wheaton Williams, Fellow, Infectious Diseases Service, Walter Reed Army Medical Center, July 1991 - July 1993.
7. Dr. Thomas Held, Walter Marget Visiting Scholar, April 1994 -

**GRANT SUPPORT**

Merck, "Evaluation of opsonic antibody response following immunization with pneumococcal conjugate vaccine" Direct: \$34,112 Indirect: \$8,528

**ABSTRACTS:**

1. Cross AS, Landau W, Levin S, Edwards LD: Resistant Proteus rettgeri: Abstract #171, 12th ICAAC, Atlantic City, New Jersey, 1972.
2. Cross AS, Landau W, Levin S, Edward LD: Proteus rettgeri: Outbreak on a medical floor. Abstract #172, 12th ICAAC, Atlantic City, New Jersey, 1972.
3. Cross AS, Jevtic M, Svirtlih L: Study of intestinal parasites in two villages, XIIth Student Congress, Medical Faculty of Belgrade, Yugoslavia, Proceedings, Belgrade, November 1969.
4. Hall WJ, Douglas RG, Roth FK, Cross AS: Peripheral Airway Dysfunction after Influenza A Infection. XIVth ICAAC, Washington, D.C., 1974.
5. Cross AS: Diagnosis of Access Site Infections in Patients Undergoing Chronic Hemodialysis, American Soc. for Microbiology Annual Meeting, New Orleans, 1977.
6. Cross AS and Lowell GH: 1978 Stimulation of Polymorphonuclear Leukocyte Bactericidal Activity by Supernatants of Activated Mononuclear Cells. Clin. Res. 26:392A.
7. Lowell GC and Cross AS: 1978 Stimulation of Polymorphonuclear Leukocyte Bactericidal Activity by Supernatants of Cultured Human Lymphoid Cells. Fed. Proc. 37(6).
8. Cross AS and Sadoff J: 1978 Human Antibody Response to Gram Negative Bacteremia. XVIII ICAAC, Atlanta, Georgia.
9. Sadoff JC, Sidberry H, Hirshfield D, Cross AS: Binding and Opsonophagocytic Antibody to Gram-negative Bacilli in Gamma-globulin Preparations for Intravenous Use. Immunoglobulin Workshop, NIH, 1979.
10. Cross AS, Sadoff J, Gemski P: A Role for Antigen and Lipopolysaccharide in Adult E. coli Bacteremia. Clin Res 27:342A, 1979.
11. Cross AS, Sadoff J: Human Antibody Response to Gram-negative Bacteremia. Abstract #504. 18th ICAAC, Atlanta, Georgia, 1978.

**ABSTRACTS CONT:**

12. Cross AS, Roup B: Role of Respiratory Assistance Devices in Endemic Nosocomial Pneumonia. 2nd International Conference on Nosocomial Infections, 7 August 1980, Atlanta, Georgia.
13. Oster CN, Dobek AS, Cross AS, Tramont ED: In vitro Activity of Cefotaxime, Moxalactam, Cefoperazone and Piperacillin against Multiple Antibiotic Resistant Gram-negative Bacteria, Abstract A45, Amer. Soc. Micro. (Annual Meeting), Dallas, Texas, 1981.
14. Cross AS, Lowell GH, Sadoff JC, Yi SJ: Enhanced Migration of Polymorphonuclear Leukocytes Suspended in Supernatants of Long Term Lymphoid Cells. Amer. Fed. Clin. Res. National Meeting, San Francisco, California, April 1981.
15. Johnson AD, Cross AS, DeCecco BT: Isolation of Exfoliation from a Non-Group II Strain of Staphylococcus aureus. Abstract B31, Amer. Soc. Micro. (Annual Meeting), Dallas, Texas, 1981.
16. Cross AS, Sadoff JC, Gemski P: The Uniqueness of the K1 Antigen in the Epidemiology and Phagocytic Resistance of E. coli, presented at 21st ICAAC, Chicago, Illinois, 1981.
17. Cross AS, Sadoff JC, Zollinger W, Mandrell, Gemski P: Ability of Murine Monoclonal Antibody Prepared Against Group B Meningococcal Polysaccharide to Kill K1-Positive E. coli. Presented at 21st ICAAC, Chicago, Illinois, 1981.
18. Opal S, Cross AS, Gemski P: K Antigen and Serum Sensitivity of Rough Escherichia coli. Abstract B163, ASM Nation Meeting, Atlanta, Georgia, 1982.
19. Cross AS, Opal S, Kopecko B: Progressive Increase in Aminoglycoside Resistance in Gram Negative Bacillary Isolates. ICAAC, Miami, Florida, 1982.
20. Cross AS, Zollinger W, Wooldridge W: Ability of Monoclonal Antibody 2-2B to Kill K1 Positive E. coli in conjunction with Cord Blood Neutrophils and Sera, and Neonatal Spinal Fluid. ICAAC, Miami, Florida, 1982.

**ABSTRACTS CONT:**

21. Cross AS, Berger M, Lowell G, Sadoff J: A Neutrophil Activating Factor from a Continuous Lymphoid Cell Line Mediates Increased Number of Neutrophil C3b Receptors and Increased Functional Activity. 15th International Leukocyte Culture Conf., Asilomar, California, 1982.
22. Lowell GH, Sadoff JC, Cross AS: Lymphokine-Mediated Stimulation of Polymorphonuclear Leukocyte Phagocytosis, Chemokinesis and Superoxide Generation. Abstract No. 33, 22nd ICAAC, Miami, Florida, 1982.
23. Berger M, Cross AS: Increase in PMN C3b Receptors Induced by Raji Cell Culture Supernatants: Direct Binding Studies with 125I-C3b FASEB, National Meeting, Chicago, Illinois, April 1983.
24. Cross AS, Jenkins J, Gemski P, Sadoff J: Importance of K1 Capsule in Serum Resistance E. coli 012. 23rd ICAAC, Las Vegas, Nevada, 1983.
25. Kim KS, Green D, Cross AS, Kaufman B, Zollinger W, Sadoff J: Studies of the Protective Mechanisms of Monoclonal Antibodies Against E. coli. Abstract #92, 24th ICAAC, Washington, D.C., 1984.
26. Baltimore RS, Cross AS, Dobek AS: Inhibitory Effect of Sodium Alginate and Mucoïd Exopolysaccharide on Antibiotic Susceptibilities of Mucoïd and Non-mucoïd P. aeruginosa. Abstract #1199, 24th ICAAC, Washington, D.C. 1984.
27. Cross AC, Gemski P, Zollinger W, Sadoff J: A Possible Role for Anticapsular and Anti-lipopolysaccharide Antibodies in Infection Caused by K1-Positive E. coli. Abstract #67. Third International Symposium on Infections in the Compromised Host, Toronto, Canada, June 1984.
28. Kim KS, Breen D, Cross A, Kaufman B, Zollinger W, Sadoff J: Efficacy of Various Monoclonal Antibodies Against E. coli. Soc. for Ped. Res. Annual Meeting, 1984.
29. Berger M, O'Shea J, Cross AS, Chused TM, Brown EJ, Frank MM: Human Neutrophils Increase Expression of C3bi Receptors upon Activation. Abstract 364A, AFCR National Meeting, Washington, D.C., 1984.

**ABSTRACTS CONT:**

30. Berger M, O'Shea J, Cross AS: A Role of Calcium and Calmodulin in Expression of Complement Receptors on Human Neutrophils. FASEB, National Meeting, St. Louis, 1984.
31. Kim KS, Green D, Cross AS, Zollinger W, Sadoff JC, Ziegler E, Silverblatt F: Protective Efficacy of Various Antibodies Against Experimental E. coli Infection. W. Soc. for Ped. Res Annual Meeting, 1984.
32. Cross AS, Gemski P, Sadoff J, Byrne W, Zollinger W: Lipopolysaccharide (LPS) is a Virulence Factor in LPS-Hyporesponsive (C3H/HeJ) Mice Infected with K1-Encapsulated E. coli. FASEB National Meeting, Anaheim, California. Abstract #2151, 26 April 1985.
33. Aarbakke J, Gordon RK, Cross AS, Miura GA, Chiang PK: Correlation Between DNA Hypomethylation and Differentiation of HL-60 Promyelocytic Cells Induced by Neplanocin A and 3-deaza Nucleosides. FASEB National Meeting, Abstract # 313, 1985.
34. Muira GA, Gordon RK, Whaun JM, Brown ND, Cross AS, Aarbakke J, Chiang PK: Neplanocin A: Biological/Biochemical Effects and Metabolic Fate. Symposium; The Biochemistry of S-Adenosylmethionine as a Basis for Drug Design, Bergen Norway, 30 June - 4 July 1985.
35. Siegel G, Byrne W, Cross AS, Finbloom D: High Dose Intravenous Immune Globulin May Impair Host Defenses. Clin. Res. 33:419A, AFCR National Meeting, Washington, D.C., 3-6 May 1985.
36. Cross AS, Wright DG: Neutrophil Sialidase: Its Association with Secondary Granules and Plasma Membranes and its Mobilization with Neutrophil Activation. Clin. Res. 33:398A. AFCR National Meeting, 3-6 May 1985.
37. Cross AS, Weismann WP: Modification of the Oxidative Responses of Neutrophils by Cyclic AMP and Forskolin. Clin. Res. 33:398A, 1985.
38. Kim KS, Wass C, Ziegler E, Cross, Kaufman B, Sadoff J: Treatment of Experimental E. coli Infection with the Combination of Chemotherapy and Immunotherapy. Soc. Ped. Res., National Meeting, Washington, D.C., 1985.

**ABSTRACTS CONT:**

39. Cryz SJ Jr, Cross AS, Furer E, Germanier R: Polyvalent Vaccine and Human Immune Globulin for the Immunological Control of Klebsiella sp. 25th ICAAC, Abstract #102, Minneapolis, Minn., 30 Sept. - 2 Oct. 1985.
40. Cryz SJ Jr, Cross AS, Furer E, Sadoff JC, Germanier R: Activities of Intravenous Immune Globulins Against Klebsiella sp. 25th ICAAC, Abstract #318, 1985.
41. Kim KS, Kang JH, Cross AS: Role of Capsular (K) and Somatic (O) Antigens in Serum Resistance and in vivo Virulence of Escherichia coli. 25th ICAAC, Abstract #318, 1985.
42. Collins HC, Cross A, McClain JB, Sadoff J: Oral Ciprofloxacin and Anti-Lipopolysaccharide Monoclonal Antibody Protect Neutropenic Rats from Lethal Infection with Pseudomonas aeruginosa. 25th ICAAC, Abstract #1089, 1985.
43. Opal S, Cross AS, Gemski P: Survey of Purported Virulence Factors of E. coli Isolated from Human Blood, Urine and Stool Specimens. Abstract #B16, ASM National Meeting, Washington, D.C., 1986.
44. Kim KS, Kang JH, Cross AS, Kaufman B, Zollinger W, Sadoff J: Murine Hybridoma Antibodies Enhance Bactericidal Activity of Cord Blood Against K1 E. coli Strains. Soc. Ped. Res., National Meeting, Washington, D.C., 1986.
45. Collins H, Iglewski BH, Cross AS: Exoenzyme S of P. aeruginosa Enhances lethality in Neutropenic Rat Model. Abstract #775, 26th ICAAC, New Orleans, Louisiana, 1986.
46. Cross AS, Sadoff JC, Kaufman B, Zolling W: The Use of monoclonal Antibody Combinations in the Treatment of E. coli Bacteremia. Abstract #124, 4th International Symposium on Infections on the Compromised Host, Ronneby Brunn, Sweden, 1986
47. Vermeulen C, Cross AS, Byrne WR, Zollinger W: Quantitative Relationship Between Capsular Content and Killing of K1-Encapsulated E. coli. Abstract #B247, ASM Annual Meeting, 1987.
48. Young L, Cross AS, Berger M, Zollinger W: Unique Complement Requirements of a Monoclonal Antibody that Cross-React with Group B Meningococcus and K1-Encapsulated E. coli. Abstract #B248, ASM Annual Meeting, 1987.

**ABSTRACTS CONT:**

49. Opal SM, Cross AS, Palmer M, Almazan R: Group B Streptococcal Infection in Infants and Adults. Clinical Characteristics and Consequences. Abstract #L32, ASM Annual Meeting, 1987.
50. Kim KS, Hong JK, Gemski P, Sadoff JC, Cross AS: The K1 Capsule in the Critical Determinant in the Development of E. coli Meningitis. Abstract #618, 27th ICAAC, New York, 1987.
51. Cross AS, Young L, Simpkins CO: Lipopolysaccharide and Phorbol Esters do not Share Common Transduction Pathway in Neutrophils for Generation of Superoxide. Abstract #1690. 71st Annual FASEB, Washington, D.C., March 1987.
52. Cross AS, Sadoff JC, Gemski P: Pre-Treatment with Recombinant Tumor Necrosis Factor and Interleukin-1 Protects Mice from Lethal Bacterial Infection. American Federation for Clinical Research National Meeting, Clin. Res., 36:353A, Washington, D.C., 1988.
53. McClain JB, Joshi B, Baker J, Cross A: Complement Consumption in Pathogenic Leptospira Spp. Asm Annual Meeting, Abstract #B238, Miami, Florida, 1988.
54. Cross AS: Role of Intravenous Immunoglobulins in the Treatment of Bacterial Infections. Proc. International Society of Blood Transfusion/British Blood Transfusion Society, 1988.
55. Cross AS, Sadoff J, Granstrom W, Cryz SJ Jr, Que J: Phase II Trial of a 24 Valent Klebsiella Polysaccharide Vaccine in Human Volunteers. Abstract #1036, ICAAC, Los Angeles, California, 1988.
56. Opal SM, Cross AS, Bodmer MW, Palardy JE, Victor GH: Monoclonal Antibody Directed Against Tumor Necrosis Factor Protects Neutropenic Rats from Lethal Pseudomonas sepsis. Abstract ##59, ASM Annual Meeting, New Orleans, Louisiana, 1989.
57. Wright DG and Cross AS: Evidence that Mobilization of Sialidase from Intracellular Stores to the Human Neutrophils has a Role in the Stimulated Adhesion Responses of these Cells. Clin. Res. 37:44A, AFCR Annual Meeting, Washington, D.C., 1989.

**ABSTRACTS CONT:**

58. Opal SM, Cross AS, Gemski P, Lyhte LW: Aerobactin and Alpha-Hemolysin as Potential Virulence Factors in E. coli Isolated from Human Blood, Urine and Stool. ASM Annual Meeting, Abstract #B76, New Orleans, Louisiana, 1989.
59. Sadoff J, Cross AS, McClain B, Futrovsky S, Furer E, Que J, Cryz SJ Jr: Human Immunization with a Multivalent Pseudomonas aeruginosa O-Polysaccharide-toxin A Covalent Conjugate Vaccine. ASM Annual Meeting, Abstract #E17, New Orleans, Louisiana, 1989.
60. Lang AB, Cross AS, Sadoff JC, Cryz SJ Jr: Production and Characterization of Human Monoclonal Antibodies to Klebsiella Capsular Polysaccharides. ASM Annual Meeting, Abstract #E61, New Orleans, Louisiana, 1989.
61. Opal SM, Cross AS, Sadoff JC, Collins H, Victor GH, Palardy J, Bodmer: The Efficacy of Combined Anti-Lipopolysaccharide and Anti-Tumor Necrosis Factor Monoclonal Antibody Therapy in Experimental Pseudomonas sepsis. 29th ICAAC, Abstract #840, Houston, Texas, 1989.
62. Cryz SJ Jr, Cross AS, Sadoff JC, Furer E: Escherichia coli 018 O-polysaccharide-Protein Conjugate Vaccines. 29th ICAAC, Abstract #53, Houston, Texas, 1989.
63. McClain JB, Hoover D, Kelly N, Cross AS: Verapamil Inhibited of Tumor Necrosis Factor Elaboration in Endotoxin (Lipopolysaccharide)-Stimulated Human Monocytes. 29th ICAAC, Abstract #1204, Houston, Texas, 1989.
64. Kelly N, Sadoff J, Cross AS: Non-Lethal Production of TNF in Response to Bacterial LPS. 2nd International Workshop on Cytokines, Hilton Head, S.C., Dec. 1989.
65. Cross AS, Asher L, Kelly N, Gemski P, Sadoff J: Cytokine Mediated Host Defenses in Invasive Infection with E. coli. T Cells and Cytokines in Health and Disease. Airlie, Virginia, 1989.
66. Kelly N, Young L, Cross AS: Differential Induction of Tumor Necrosis Factor (TNF) by Bacteria Expressing the Smooth and Rough LPS Phenotype. International Endotoxin Society, First Annual Meeting, May 1990.

**ABSTRACTS CONT:**

67. Cryz SJ Jr, Furer E, Cross AS, Sadoff JC, Que JU: Safety and Immunogenicity of Escherichia coli 018 O-Polysaccharide Conjugates in Humans. American Society for Microbiology, Annual Meeting, Anaheim, California, 1990.
68. Mark D, Cross AS, Clements S, Sims T, Glass A, Duncan W, Weismann W: Early Signal Transduction in Neutrophils from Patients with Diabetes Mellitus. American Federation for Clinical Research, National Meeting, Clin. Res. 38:558A, May 1990.
69. Cross AS, Kelly NM, Gemski P, Sadoff JC: Cytokine-Mediated Host Defenses to Invasive E. coli are not Impaired by Antibody to Tumor Necrosis Factor and Can be Further Stimulated. American Federation for Clinical Research, National meeting, Clin. Res. 38:326A, May 1990.
70. Cross AS, Cryz SJ Jr, McClain JB, Taylor D, Sadoff JC: Preparation and Properties of Immunoglobulin Hyperimmune to Klebsiella and Pseudomonas aeruginosa. American Federation for Clinical Research, National Meeting, Clin. Res. 38:394A, May 1990.
71. Kim KS, Wass CA, Opal SM, Cross AS: Role of Tumor Necrosis Factor in Modulating Blood-Brain Barrier Permeability in vivo. Society for Pediatric Research, National Meeting, Anaheim, California, May 1990.
72. Kim KS, Wass CA, Cross AS: CNS Pathophysiologic Changes During Experimental Meningitis Following Intracisternal (i.c.) vs Hematogenous Inoculation. 30th ICAAC, Abstract #80, 1990.
73. McClain JB, Cross AS, Cryz SJ Jr: Protective Effect of Hyperimmune Immunoglobulin on the Lethality of Klebsiella Infection. 30th ICAAC, Abstract #477, 1990.
74. Kelly N, Cross AS: The Involvement of Tumor Necrosis Factor and Interleukin-6 in Gram-Negative Bacterial Infections. International Endotoxin Society Annual Meeting, Abstract #11-P-64.
75. Cryz SJ Jr, Que JU, Sadoff JC, Furer E, Cross AS: Polyvalent Hyperimmune Intravenous Globulin for Prevention of Gram-Negative Nosocomial Infections. 3rd International Conference on Nosocomial Infections, Atlanta, Georgia, 1990.

**ABSTRACTS CONT:**

76. Hoover DL, Friedlander AM, Cross AS: Modulation of TNF, IL-1 and IL-6 Secretion by Anthrax Toxin. 28th Annual Meeting, Society for Leukocyte Biology, 1991.
77. Opal SM, Fisher CJ, Cross AS, Sadoff JC, Palardy JE, Young L, Harris SJ, Stephens S & CB6 Study Group: The Offending Organism, Cytokine Profile and Outcome in Sepsis Syndrome. 31st ICAAC, Chicago, Illinois, 1991.
78. Opal SM, Fisher CJ, Cross AS, Marra MN, Scott RW, Palardy JE: Bactericidal/Permeability-Increasing Protein as a Novel Anti-Endotoxin Therapeutic Agent. 31st ICAAC, Chicago, Illinois, 1991.
79. Cross AS, Hoover D, Garnic M: Macrophage Colony Stimulating Factor Enhances Host Defenses Against Bacteria Both In vivo and In vitro. Cytokine 3: 488, Abstract #231, 3rd International Workshop on Cytokines, Stresa, Italy, Nov. 1991.
80. Cross AS, Opal SM, Palardy JE, Bodmer MW, Sadoff JC: The Efficacy of Combination Immunotherapy in Experimental Pseudomonas sepsis. Clin. Res. 39:214A, 1991.
81. Drabick J, Bhattacharjee A, Alvin C, Schwartz G, Sadoff J, Cross AS: Reactogenicity of a Panel of Anti-Lipid A Reagents with Lipid A and Its Components. Clin. Res. 39:175A, 1991.
82. Hoover DL, Friedlander AM, Cross AS: Anthrax Edema Toxin Differentially Regulates LPS-Induced Monocyte Production of Tumor Necrosis Factor, Interleukin-1 and Interleukin 6. Cytokine 3:453, Abstract #24, 1991.
83. Cross AS, Artenstein A, Fredeking T, Que J, Furer E, Sadoff J, Cryz SJ Jr: Safety and Immunogenicity of a Polyvalent E. coli Vaccine in Human Volunteers. Clin. Res. 40:260A, National meeting of the AFCR, Baltimore, Maryland, 3 May 1992.
84. Williams, W, Cross AS, Bhattacharjee A, Hoover, DL, Young L, Drabick, J, Winston S, Sadoff J: Inhibition of Endotoxin Activity in Mice with Antisera to Gentiobiose Heptaacetate Conjugate Vaccines. Clin. Res. 40:383A, 1992.
85. Bhattacharjee AK, Opal SM, Drabick JJ, Collins H, Cross AS: Both IgG and IgM Fractions of Sera from Rabbits Immunized with boiled E. coli J5 Bacteria Protect Neutropenic Rats Against Lethal Bacteremia. Clin. Res. 40:382A, 1992.

**ABSTRACTS CONT:**

86. Opal SM, Fisher CJ, Cross AS, Palardy JE, Hoover DL, Marra MN, Scott RW: Bactericidal/Permeability-Increasing Protein as an Anti-Endotoxin Therapeutic Agent: Comparisons with Anti-Core Glycolipid Polyclonal Antibody Therapy. Clin. Res. 40:213A, 1992.
87. Drabick J, Bhattacharjee A, Williams W, Siber G, Cross AS: Covalent Polymixin B-Starch and Polymixin B-Immunoglobulin G Conjugates as Novel Anti-Endotoxin Reagents. Clin. Res. 40:287A, 1992.
88. Babcock J, Sasala K, Cross AS, Deal CD: Sialidase in Neisseria Gonorrhoeae Infections. Clin. Res. 40:382A, 1992.
89. Stamatou NM, Gomatos PJ, Fowler A, Dow N, Wohlhieter JA, Deal C, Cross AS: Desialylation of Peripheral Blood Mononuclear Cells Promotes Growth of HIV-1. Keystone Symposium on the Prevention and Treatment of AIDS, Keystone, Colorado, 27 March-3 April 1992. (J. Cellul. Biochemistry 1992, Suppl. 16E).
90. Bhattacharjee A, Sadoff J, Collins H, Wright C, Winston S, Williams W, Teng N: Gentiobiose Heptaacetate-Diphtheria Toxin Conjugated Vaccine Produce Protective Antibodies Against Gram-Negative Bacteremia. 2nd Conference of the International Endotoxin Society, Vienna, Austria, 17-20 August 1992.
91. Drabick J, Bhattacharjee A, Williams W, Siber G, Cross AS: Covalent Polymixin B-Immunoglobulin G and Polymixin B-Soluble Starch Conjugates as Novel Anti-Endotoxin Reagents. 2nd Conference of the International Endotoxin Society, Vienna, Austria, 17-20 August 1992.
92. Cross AS, Asher L, Seguin M, Kelly N, Sadoff J, Gernski P: Novel Lipopolysaccharide-Initiated, Cytokine-Mediated Host Defense Mechanism Against Extra-Intestinally Invasive Escherichia coli. 2nd Conference of the International Endotoxin Society, Vienna, Austria, 1992.
93. Drabick J, Hoover D, Deal C, Morales V, Cross AS: The Discovery and Properties of Novel Lipid A Receptors on Human Monocytes by an Immunoassay Technique. 32nd ICAAC, Anaheim, California, 1992.

**ABSTRACTS CONT:**

94. Williams WJ, Yuan L, Finkelman M, Siber GR, Cross AS: Efficacy of Endotoxin Neutralizing Protein in a Mouse Model of Sepsis. American Federation for Clinical Research, National Meeting, Clin. Res. 41:173A, Washington, D.C., 1993.
95. Liang Y, Hoover DL, Cross, AS: Induction of Tolerance to Lipopolysaccharide May Enhance or Impair Protective Defenses Against Live Bacterial Challenge in a Time-Dependent Manner. American Federation for Clinical Research, National Meeting, Clin. Res. 41:379A, Washington, D.C., 1993.
96. Bhattacharjee AK, Opal SM, Drabick JJ, Collins H, Taylor R, Cotton A, Palardy J, Cross AS: Purified E. coli J5LPS-Specific IgG Protects Neutropenic Rats Against Gram-Negative Bacterial Sepsis. American Federation for Clinical Research, National Meeting, Clin. Res. 41:247A, Washington, D.C., 1993.
97. Russo TA, Liang Y, Cross AS: The Presence of K54 Capsular Polysaccharide Increases the Pathogenicity of Escherichia coli in vivo. Clin. Res. 41:247A, 1993.
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97. Cross AS, Novel approaches to the treatment of sepsis: lessons learned and future directions, Shock 1996, 6:S71-S74

**INVITED SPEECHES:**

1. "Opportunistic Infection in the Compromised Host", and "Staphylococcal Bacteremia". Medical-Surgical Training Conference, Garmisch-Partenkirchen, Germany, May 1979.
2. Cross AS, Sadoff J, Iglewski B: "Evidence for the Role of Toxin A in the Pathogenesis of Infection with Pseudomonas aeruginosa", Gordon Research Conference on Microbial Toxins and Pathogenesis, 10 July 1980. Wolfeboro, N.H.
3. "Epidemiology of Infections Caused by P. aeruginosa". Symposium, ASM Annual Meeting, New Orleans, 1983.
4. "Immunotherapy of Gram-Negative Infections", 120th ARCOM Symposium, Charleston, South Carolina, May 1984.
5. "Epidemiology of Infections Caused by P. aeruginosa". ASM Annual Meeting, 1987.
6. "Relative Role of LPS and Capsule in the Serum Resistance of E. coli". NATO Advanced Workshop "Bacteria, Complement and the Phagocytic Cell". Maratea, Italy, April 1987.
7. "Role of Intravenous Immunoglobulins in the Treatment of Bacterial Infections", XX Congress, International Society of Blood Transfusion/British Blood Transfusion Society, London, England 14 July 1988.
8. "Immunization with Conjugate Vaccines", GAP Conference, Cystic Fibrosis Foundation, Williamsburg, Va, 9 June 1988.

**INVITED SPEECHES CONT:**

9. "Prospects for Immunotherapy of Invasive Infections Caused by K. pneumoniae and E. coli". Joint Israel Defence Forces - U.S. Army Conference on Vaccines of Military Importance. Ramat Gan, Israel, 23 March 1988.
10. "The Use of IVIG in Sepsis", in New Directions in the Clinical Use of IVIG, Charlotte, North Carolina, 17-18 March 1989.
11. "Bacteria-Phagocyte Interactions", Third Discussion Meeting on Phagocyte Function, Edinburgh, Scotland, 1 June 1990.
12. "Use of IVIG in Bacterial Infections" in "IVIG: Indications in HIV Infection and AIDS", Symposium, Rudolf Virchow University, Berlin, 29 May 1990.
13. "Immunotherapy of Sepsis", in "Treatment of Serious Infections in the 1990's: Antimicrobials and Host Factors", Carmel, California, 15-17 July 1990.
14. "Advances in the Immunotherapy of Septic Shock". Grand Rounds, Madigan AMC, Tacoma, Washington, 21 September 1990.
15. "Immunotherapy of Septic Shock". Grand Rounds, Walter Reed Army Medical Center, Washington, D.C., 1 March 1991.
16. "Development of a Synthetic Lipid A Analogue Vaccine", in Newer Aspects of the Adjuvant Action of Lipid A and its Analogs, Airline, Virginia, 9 April 1991.
17. "Non-antibiotic Management of Infectious Diseases, including Globulin for Sepsis: Fifth Biennial Symposium on Current Topics in Clinical Infectious Diseases, Roanoke, Virginia, 11 April 1991.
18. "Immunotherapeutic Approaches to the Treatment of Gram-negative Bacterial Sepsis", Tri-Service Infectious Diseases Meeting, San Diego, California, 8 March 1991.
19. "Immunotherapy of Septic Shock", Annual Symposium, Greater Washington Infectious Diseases Society, 23 March 1991.

**INVITED SPEECHES CONT:**

20. "The Use of Hyperimmune Immunoglobulin for the Prophylaxis of Gram-negative Sepsis", New Advances in the Treatment of Endotoxemia and Sepsis, Philadelphia, Pennsylvania, 6-7 May 1991.
21. "Non-antibiotic Approaches to the Treatment of Septic Shock", Grand Rounds, Manhattan Veterans' Affairs Medical Center, 30 April 1991.
22. "Opsonophagocytic Properties of Different Immunoglobulin Preparations", at 17th International Congress of Chemotherapy, Berlin, Germany, 15 June 1991.
23. "Cytokine-Mediated Host Defenses Against E. coli", at Bureau of Biologics, Washington, D.C., 11 July 1991.
24. Clinicopathologic Conference, "Hepatic Candidiasis", Discussant. Walter Reed Army Medical Center, 25 September 1991.
25. "Progress in the Immunotherapy of Septic Shock", Center for Vaccine Development, University of Maryland, Baltimore, 5 November 1991.
26. "Importance of an LPS-Initiated, Cytokine-Mediated Host Defense Mechanism Against Gram-Negative Bacteria". NIAID, Bethesda, Maryland, 16 December 1992.
27. "Selection of Bacteria for Animal Models of Sepsis", Second Consensus Development Conference on the Treatment of Radiation Injuries. Armed Forces Radiobiology Research Institute, Bethesda, 14-17 April 1993.
28. "Update in the Immunotherapy of Sepsis", Philippine College of Physicians, Annual Meeting, Manila, 11-15 May 1993.
29. "Where Do We Stand with Antibody Treatment of Gram Negative Sepsis", in Symposium, Use of Antibody Therapy to Prevent and Treat Infectious Diseases in Neonates and Children", Washington, D.C., 4 May 1993.
30. "Use of Hyperimmune Immunoglobulin", Advances in the Diagnosis, Prevention and Treatment of Endotoxemia and Sepsis, Philadelphia, 17-18 June 1993.

**INVITED SPEECHES CONT:**

31. "Clinical Results of Trial with Klebsiella-Pseudomonas IVIG", in Development of Hyperimmune IVIGs, Pasadena, CA, 20 July 1993.
32. "Development of Bacterial Vaccines", in Infectious Diseases Grand Rounds, University of Medicine and Dentistry of New Jersey, New Brunswick, NJ, 25 January 1994.
33. "Cytokine Responses to Infection", Society for Pediatric Research, Annual Meeting, Seattle, Washington, May 1994.
34. Invited Discussant, American Federation for Clinical Research, National Meeting, Baltimore, May 1994.
35. "Development of Hyperimmune Immunoglobulins in the Prevention of Gram-Negative Bacterial Infection", UMCC Grand Rounds (9/26/94).
36. "Use of Pseudomonas aeruginosa Vaccine in Non-Cystic Fibrosis Population". Cystic Fibrosis Foundation. 8th National Meeting, Orlando, FL (October 22, 1994).
37. "Immune-Based Therapy for the Treatment of Bacterial Sepsis". 11th Annual American College of Physician, Army Regional Meeting. Reston, VA (October 27, 1994).
38. "IVIGs to Prevent and Treat Infectious Diseases", International Symposium on Immunobiology of Proteins and Peptides, Rio Rico, Arizona (11/18/94).
39. "Clinical syndromes caused by Pseudomonas aeruginosa and their treatment", Grand Rounds, Brown University (Memorial Hospital of Rhode Island). Providence, RI, February 15, 1994.
40. "Status of the Federal Hyperimmune Immunoglobulin Trial," Infectious Diseases Research Seminar, Brown University School of Medicine. Providence, RI, February 15, 1994.
41. "Update on antifungal therapy," Medical Ground Rounds, University of Maryland, March 8, 1995.

**INVITED SPEECHES CONT:**

42. "Update on Clinical Trials in the Treatment of Sepsis, Medical Grand Rounds, Sibley Hospital, Washington, DC, November 4, 1994.
43. "Septicemia", Grand Rounds, Montgomery General Hospital, Olney, MD. July 6, 1995.
44. "Review of recent clinical trials in the treatment of sepsis." Hematology Grand Rounds, Johns Hopkins University Hospital, July 31, 1995.
45. "Animal models in the investigation of septic shock", in Symposium: "Septic Shock: Should We Give Up?" 35th ICAAC, San Francisco, CA, September, 1995.
46. "Novel approaches to the treatment of sepsis: Lessons learned and future directions". Sepsis and Septic Complications, Defense and Civil Institute of Environmental Medicine, Toronto, CANADA 12-13 October 1995.
47. "Flesh Eating Bacteria", Seminar, St. Mary's College of Maryland, November 15, 1995.
48. "Prevention of sepsis" in Inflammation and Multiple Organ Failure: Mechanisms and Therapy in Trauma and Burns, Snowbird, Utah, January 23, 1996.
49. "Critical ICU Pathogens", Workshop, Society of Critical Care Medicine, February 6-9, 1996, New Orleans, LA.
50. "Role of Passive Immunization in the Prevention of Infection in the ICU", Workshop on Anti-Infective Strategies, Society of Critical Care Medicine, February 6-9, 1996, New Orleans, LA
51. "Development of Anti-endotoxin Vaccine", Food and Drug Administration, Center for Biologics Evaluation and Research, Bethesda, MD, March 28, 1996
52. Medical Grand Rounds, "Septic Shock", Harbor Hospital Center, Baltimore, MD September 13, 1996.
53. Development of anti-endotoxin vaccine for sepsis, Seminars in Clinical and Diagnostic Pathology, University of Maryland, March 5, 1996.

**INVITED SPEECHES CONT:**

54. The development of an anti-endotoxin (J5) vaccine for the active and passive treatment of sepsis. Seminar, Department of Microbiology and Immunology, Uniformed Services University of the Health Sciences, Bethesda, MD, November 25, 1996.
55. Immunotherapeutic approaches to the treatment of sepsis, Infectious Disease Grand Rounds, University of Massachusetts Medical Center, Worcester, MA January 22, 1997.
56. Treatment of sepsis with anti-endotoxin and type-specific immunoglobulins, 4th International Congress on the Immune Consequences of Trauma, Shock and Sepsis. Munich, Germany, March 7, 1997.
57. Animal models made easy. 7th Annual IBC International Symposium on Sepsis, Washington, DC April 28, 1997.
54. Schneider H, RA Kushner, JW Boslego, AS Cross, CD Deal. Association of gonococcal lipooligosaccharide phenotype with virulence. Ninth Intern. Pathogenic Neisseria Conf., Winchester, GB, Sept 1994.